

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

May 4, 2010

To: Mr. Rynal Stephenson, P.E.
Ramey Kemp & Associates, Inc.
5808 Faringdon Place, Suite 100
Raleigh, N.C 27609

Subject: Proposed Glenn School Road Development Traffic Impact Analysis Review - Revised

The proposed Glenn School Road Development, prepared for Horvath Associates, PA, is located on the south side of SR 1675 (Glenn School Road), west of the I-85 southbound ramp interchange on in Durham, NC. The proposed development will consist of a 5,000 square foot Fast food Restaurant with drive-thru and a 14 Pump Fueling Station and Convenience Mart. The TIA anticipates the build-out year of the development as 2012 with an analysis year of 2013. The proposed development is projected to generate unadjusted daily trips of 10,077 with 479 A.M. peak hour site trips and 436 P.M. peak hour site trips.

The TIA analyzed the following five (5) intersections:

- SR (Glenn Road) and SR 1675 (Glenn School Road) – Unsignalized
- SR 1675 (Glenn School Road) and Site Drive #1 – Unsignalized
- SR 1675 (Glenn School Road) and Site Drive #2 – Unsignalized
- I-85 Southbound Ramp and SR 1675 (Glenn School Road) – Signalized
- I-85 Northbound Ramp and SR 1675 (Glenn School Road) – Unsignalized

Approved Surrounding Developments

- There are no approved developments in the vicinity of the study area.

TIP Roadway Improvement Projects Relevant to Proposed Development

- NCDOT TIP #U-4743 proposes improvements to add lanes on I-85 from US 70 to SR 1632 (Red Mill Road).
- NCDOT TIP #U-4721 "Northern Durham Parkway"– proposes a new urban freeway facility on a new location from I-540 to US 501 (Roxboro Road).

Trip Generation and Distribution

- 30% to/from the north via I-85
- 30% to/from the south via I-85
- 10% to/from the north via SR 1636 (Glenn Road)
- 10% to/from the south via SR 1636 (Glenn Road)
- 20% to/from the southeast via SR 1675 (Glenn School Road)

Capacity Analysis for Existing and Future Conditions

- Existing (2009) Conditions
- Projected (2013) No-Build Conditions
- Projected (2013) Build Conditions

Summary of Road Improvements

The Department has reviewed the Traffic Impact Analysis (TIA) for the Glenn School Road Development prepared by Ramey Kemp and Associates, Inc. (Sealed and dated December 10, 2009) and Merge Analysis (Sealed and dated April 12, 2010). In order to accommodate the site-generated traffic safely and efficiently, while also attempting to protect the functional integrity and operational capacity of the adjacent roadway facilities, we require the following improvements and/or restrictions related to this development. Any additional changes to the site plan must be submitted in writing to the District Office.

SR 1636 (Glenn Road) and SR 1675 (Glenn School Road) Intersection (Unsignalized)

No geometric improvements are necessary at this intersection at this time to mitigate site-generated traffic.

SR 1675 (Glenn School Road) and Proposed Site Driveway #1 Intersection (Unsignalized)

Eastbound Proposed Site Drive #1

- Construct a three (3) lane cross-section consisting of one (1) ingress lane and two (2) egress lanes. The egress lanes should provide an exclusive right- turn lane and an exclusive left-turn lane with a minimum of 100 feet of internal protected storage before parking and crossing maneuvers should be allowed.

Northbound SR 1675 (Glenn School Road)

- Provide a left-turn lane with a minimum of 100 feet of full storage and appropriate taper.

SR 1675 (Glenn School Road) and Proposed Site Driveway #2 Intersection (Unsignalized)

Eastbound Proposed Site Drive #2

- Construct a two (2) lane cross-section consisting of one (1) ingress lane and one (1) egress lane. The egress lane should provide an exclusive right-turn lane only with a minimum of 100 feet of internal protected storage.

Northbound SR 1675 (Glenn School Road)

- Provide a directional crossover (left-over) with a minimum of 100 feet of full storage and appropriate taper.

I-85 Southbound Ramp and SR 1675 (Glenn School Road) Intersection (Unsignalized)

Vehicles travelling along I-85 south create a heavy directional flow during the AM peak hour. The I-85 south on-ramp at SR 1675 (Glenn School Road) has a short acceleration length that allows existing traffic to safely merge onto the interstate. Although site generated traffic increases the total amount of vehicles merging during peak hours, the Merge Analysis states that the level of service for the ramp appears acceptable in the build out year.

No geometric improvements are necessary at this intersection at this time to mitigate site-generated traffic.

I-85 Northbound Ramp and SR 1675 (Glenn School Road) Intersection (Unsignalized)

Due to the anticipated traffic volumes, this intersection may meet signal warrants during or at full build-out of the site. A full signal warrant analysis should be conducted to determine if signal installation is appropriate. If signalization occurs, no further improvements are necessary at this intersection to mitigate site-generated traffic.

General

Cross-access to adjacent properties is strongly encouraged to reduce repetitive trips and provide future alternative routes of ingress/egress.

Due to, but not limited to, the comments and recommendations from this review of the proposed development, changes in the internal circulation may be necessary to ensure that driver confusion is minimized to the maximum extent possible.

Any signal revisions, modifications, or additions necessitated by the development should be coordinated with the Regional Traffic Engineer, the Division Traffic Engineer, the Signals and Geometrics Section, and the City of Durham.

Any pavement marking revisions/modifications necessitated by the development should be the responsibility of the developer and coordinated with the Division Traffic Engineer.

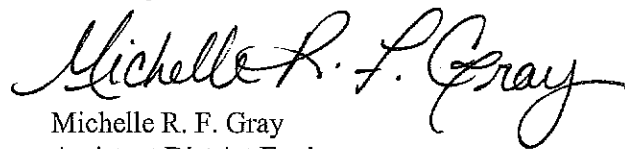
Any roadway modifications or improvements necessitated by the development should be the responsibility of the developer unless otherwise noted.

NCDOT driveway permits will be required for driveways on SR 1675 (Glenn School Road). Once the driveway permit has been approved and issued, a copy of the final driveway permit requirements should be forwarded to this office.

Reference should also be made to the information included in the "General Recommendations Attachment."

If we can provide further assistance, please contact me at (919) 220-4750.

Sincerely,

A handwritten signature in black ink, reading "Michelle R. F. Gray". The signature is fluid and cursive, with the first name "Michelle" being the most prominent.

Michelle R. F. Gray
Assistant District Engineer

Attachments

cc: Mr. H. Wesley Parham, P.E.

GENERAL RECOMMENDATIONS ATTACHMENT
(For Proposed Glenn School Road Development)

Adequate horizontal and vertical sight distances should be reserved at all proposed entrances. Foliage that interferes with sight distance should be cut back to protect lines of sight. The District Engineer should determine if all drainage facilities are adequate. Curb cuts and curb ramps should be constructed in conformance with the "Guidelines for Curb Cuts and Ramps for Disabled Persons, " if applicable.

The developer may be required to obtain an approved encroachment agreement covering proposed work within the state right-of-way. If this is the case, the encroachment should be cross-referenced to this review.

All street and driveway entrances onto state system roadways should be controlled with appropriate traffic control devices, including but not limited to, stop, yield, directional, regulatory, and advisory signs and pavement markings. All traffic control devices shall conform to the requirements set forth in the Manual on Uniform Traffic Control Devices. Final pavement marking and signing plans should be submitted to the Division Traffic Engineer for approval prior to the installation of any signs and/or pavement markings.

Unless otherwise noted, a recommended width of 40 feet (curb face to curb face) should be used at each drive. It is also recommended that 40 foot (minimum) radii should be used at each drive to accommodate any service type vehicles or truck traffic that may visit the site.

If the developer anticipates adding or petitioning for addition to the state system, all roads/streets should be designed and constructed in conformance with the current North Carolina Department of Transportation design and construction guidelines.

All "outparcels" or "excluded areas" should be served internally with no additional access onto abutting roadways. The developer should convey this condition in any lease or sell agreements.

As required by the "Policy on Street and Driveway Access to North Carolina Highways" dated July 2003, the applicant is responsible for identifying all right-of-way and/or control-of-access limits and for including this information on all submittals. Failure to accurately disclose R/W and C/A limits could result in the denial or closure of access points.

Any additional development, either within this site or adjacent to this site, that intends on using this development's access will require an updated driveway permit and re-evaluation of geometric and traffic control needs.

All widening should include appropriate transitional and deceleration tapers. Recommended turn lane and transitional treatments are shown on pages 78 and 79 of the "Policy on Street and Driveway Access to North Carolina Highways, II dated July 2003.

Where possible, opposite side driveways should be aligned to prevent the operational and safety problems caused by offset driveways